General information

This chapter provides important information on the use of this documentation.

This documentation contains information which must be observed in order to ensure safe and efficient application of the product.

Read this document carefully and familiarize yourself with the operation of the product before putting it to use. Keep this document close to hand in order to be able to refer to it when necessary.

Symbols

Symbol	Meaning	Comments
 Warning!	Warning!	Read the warning carefully and take the safety measures described! Serious injury can occur if the safety measures are not taken.
 Caution!	Attention!	Read the warning carefully and take the safety measures described! Light injury or object damage can occur if the safety measures are not taken.
i	Information	Provides useful tips and information.
➢, 1, 2	Handling objective	Describes the objective reached by the following handling steps. Observe the order for numbered handling objectives
✓	Prerequisite	Prerequisite must be fulfilled in order for a step to be carried out as described
❯, 1, 2, ...	(Handling) step	Carry out handling steps. Observe the order for numbered handling steps!
Text	Display text	Text appears in instrument display.
Taste	Operating key	Press key.
	Function key	Press key.
-	Result	Describes the result of a (handling) step previously carried out.
⇨	Cross reference	Reference to further or more detailed information.

1. Safety instructions

This chapter describes general rules which must be observed in order to ensure safe use of the product.

Avoiding damage and injury

- Do not use the measuring instrument on or close to live components.
- Never store the instrument together with solvents, do not use dessicants.
- Infrared measurement: When measuring live components, observe the necessary safety distance.

Product safety / Preserving warranty claim

- Use the measuring instrument only within the parameters given in the Technical Data.
- Use the instrument only for the purpose for which it is intended. Do not use force.
- Do not subject to electromagnetic radiation (microwaves, induction heating), static electricity, heat or extreme temperature fluctuations.
- Do not subject handles and wires to temperatures over 70 °C if these are not expressly approved for higher temperatures. Temperature information on probes/sensors refers only to the measuring range of the sensors.
- Open the measuring instrument for maintenance or repair purposes only if this is expressly described in the documentation.
  Carry out only maintenance and repair work which is described in the documentation. When doing so, observe the steps prescribed. For safety reasons, use only original Testo replacement parts.
-  Laser radiation! Do not look into the laser beam. Laser class 2.

Correct disposal

- Hand in defective rechargeable batteries / empty batteries to the correct collecting points.
- Send the product back to Testo if it is no longer to be used. We will dispose of it ecologically.

2. Intended purpose

This chapter describes the areas of application for which the instrument is intended.

Use the product only for the areas for which it was designed. In case of doubt please consult Testo.

The testo 845 is a compact infrared thermometer for the non-contact measurement of surface temperatures. Using connected probes, additional measurements can be made with the testo 845.

The product may **not** be used in the following areas:

- In areas where there is a danger of explosion.
- For diagnostic measurements in medicine.

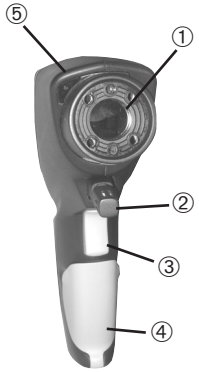
For reasons of Patent Law, the testo 845 may not be used in Great Britain in combination with the humidity module.

3. Product description

This chapter provides an overview of the components of the product and their functions.

3.1 Display and operating elements

Overview



① Infrared sensor
② Humidity module
(standard with 0563 8451; retrofittable for 0563 8450)
③ Measurement trigger
④ Battery compartment
⑤ IR diode for printer
⑥ Display
⑦ Slide switch
⑧ Operating buttons
⑨ Probe socket
⑩ USB interface

Button functions



Button	Functions
Mode	Change configuration settings
	Printout of values on Testo IR printer Instrument configuration: activate adjustment
	Store a measurement protocol Measurement and instrument configuration menu: apply values and jump to next setting menu
	Switch between possible display images
	Measurement and instrument configuration menu: change setting values

Display

Display	Functions
 + °C/°F	Temperature reading IR
+ °C/°F	Temperature reading contact probe
+ %	Ambient humidity value in % relative humidity
+ °C/°F	Ambient temperature reading
+ °Ctd	Ambient dewpoint
+ °C Δtd	Dewpoint distance

3.2 Interfaces

USB interface

The mains unit (accessory) for the voltage supply of the instrument can be connected via the USB interface on the underside of the instrument.

Measurement / instrument data can be exchanged with a PC via the USB interface. The measuring instrument is a HighPower instrument, an additional USB-hub may be necessary!

Probe socket(s)

Plug-in thermocouple probes type K can be connected via the probe socket on the underside of the instrument.

3.3 Voltage supply

The voltage supply is provided by two mignon batteries (included in delivery) or rechargeable batteries or via a USB mains unit (accessories). Rechargeable batteries cannot be charged in the instrument.

4. Commissioning

This chapter describes the handling steps necessary for commissioning the instrument.

➢ Batteries / rechargeable batteries

1. Open the battery compartment cover in the handle.
2. Fit batteries / rechargeable batteries (2 x Mignon) into the battery compartment. Observe polarity!
3. Close the battery compartment cover.

5. Operation

This chapter describes the handling steps which are carried out often when using the instrument

5.1 Connecting probes

Plug-in probes

Plug-in probes must be connected before switching on the measuring instrument in order for them to be recognized by the instrument.

› Insert the connection plug of the probe into the probe socket of the instrument.

Connecting humidity module 0636 9784



› Open the cover carefully using a suitable tool.
› Remove the cover from the connection plug.
› Connect the humidity module to the plug and push into the housing.

5.2 Switching on / off

➢ Switching instrument on:

› Press measurement trigger and hold down
  - The measurement display is opened: The current measurement value and the min. / max. values are displayed

➢ Switching instrument off:

› The instrument switches off automatically after 10 s if no button is pressed.

6. Setting instrument

This chapter describes the handling steps required to adapt the measuring instrument for special measurement tasks.

6.1 Instrument configuration

The basic settings for the measuring instrument are carried out in the configuration menu.

ℹ The configuration mode can be exited at any time. To do this, press Mode. Instrument switches to measurement display. Changes already applied with 🖫 in the configuration mode are saved.

1 Opening configuration mode:

✓ The instrument is switched on and is in measurement display.

› Hold down **measurement trigger** and briefly press Mode: **°C** is displayed.
  - The instrument is now in configuration mode.

2 Setting temperature:

✓ The configuration mode is open, **°C** is displayed.

› Set °C/°F with ▲/▼ °C/°F and confirm with 🖫.

ℹ The setting is applied with 🖫 and the instrument jumps to the next function.

⇨ Continue with handling objective SETTING DISPLAY ILLUMINATION.

3 Setting display illumination:

✓ The configuration menu is open, °C is displayed.

› Go to menu **Display illumination On/Off** with .

Select the desired option with / and confirm with .

.➪Continue with SET CONTINUOUS MEASUREMENT.

4 Setting continuous measurement (see also Chapter 8. Measuring)**:**

✓ The configuration mode is open, °C is displayed.

› Go to menu **Auto on/off** with (2x).

Select the desired option with / and confirm with .

The laser function is not available during continuous measurement.

➪ Continue with handling objective SETTING LASER.

5 Setting laser:

✓ The configuration mode is open, °C is displayed.

› Go to menu **Laser on/off** with (3x).

Select the desired option with / and confirm with .

➪ Continue with handling objective SETTING DATE.

6 Setting date:

✓ The configuration mode is open, °C is displayed.

› Go to menu **Setting date** with (4x).

Setting day: Select the desired day with / and confirm with .

Setting month: Select the desired month with / and confirm with .

Setting year: Select the desired year with / and confirm with .

➪ Continue with handling objective SETTING TIME.

7 Setting time:

✓ The configuration mode is open, °C is displayed.

› Go to menu **Setting time** with (7x).

Setting hour: Select the desired hour with / and confirm with .

Setting minute: Select the desired minute with / and confirm with .

➪ Continue with handling objective ADJUSTING HUMIDITY MODULE AT 11.3 AND 75.3 %RH (only with integrated humidity module).

8 Adjusting humidity module at 11.3 and 75.3 %rF (only with integrated humidity module):

ℹ Before checking or calibrating, the probe and the checking and calibrating set should be stored at a constant temperature range (+20 to +30 °C) for approx. 12 hours.

ℹ To calibrate the humidity module in the test container, carefully pull the humidity probe out of the testo 845. The test container can be stored horizontally during calibration.

- The minimum assimilation time for checks with the probe inserted into the test container is 15 minutes.
- A minimum assimilation time of one hour is recommended for calibration.
- Keep away from all external interference (direct heat radiation, draughts etc.).
- Observe directions for use “Control and humidity adjustment set) (Order No. 0973 1820).

✓ The configuration mode is open, °C is displayed.

› Go to menu Adjusting humidity module at 11.3 and 75.3 %RH with 🖫.

› Activate adjustment with 🖫. The corrected value is displayed for 3 s.

⇨ Continue with handling objective FACTORY SETTINGS.

9 Factory settings:

✓ The configuration mode is open, °C is displayed.

› Go to menu Factory settings (reset) with 🖫.
The values return to the delivery status. .
Select the desired option with ▲/▼ and confirm with 🖫.
Return to main menu.

6.2 Measurement configuration

In the configuration menu, settings for measurement are carried out.

ℹ The configuration mode can be exited at any time. To do this, press Mode. Instrument switches to measurement display. Changes already applied with 🖫 in the configuration mode are saved.

1 Opening configuration mode:

✓ The instrument is switched on and is in measurement display.

› Press Mode drücken.
- The instrument is now in configuration mode.

2 Setting degree of emission (ε):

✓ The configuration mode is open.

› Set value with ▲/▼ and confirm with 💾.

➪ Continue with SELECTION OF ALARM VALUE TO BE MONITORED.

3 Selection of alarm value to be monitored (dtd, Ir, rH Surface):

✓ The configuration mode is open.

Select the desired option with ▲/▼ and confirm with 💾.

➪ Continue with handling objective SETTING UPPER LIMIT VALUE (IR).
or

➪ Continue with handling objective SETTING LIMIT VALUE ΔTD
or

➪ Continue with handling objective SETTING LIMIT VALUE RHSI.

4 Setting upper limit value (Ir):

✓ The configuration mode is open.

› Select upper limit value with ▲/▼ and confirm with 💾.

ℹ If the upper limit value is exceeded, the max. value is displayed in the top line (symbol for exceeded upper limit value appears). The IR temperature is displayed as the main value. The corresponding limit/alarm value is displayed in the lower line. The alarm symbol appears. If an acoustic alarm has been selected, it sounds. If the value drops back under the limit value, the instrument returns to the display previously shown.

➪ Continue with SETTING LOWER LIMIT VALUE (IR).

5 Setting lower limit value (Ir):

✓ The configuration mode is open.

› Select lower limit value with ▲/▼ and confirm with 💾.

ℹ If the lower limit value is exceeded, the max. value is displayed in the top line (symbol for exceeded lower limit value appears). The IR temperature is displayed as the main value. The corresponding limit/alarm value is displayed in the lower line. The alarm symbol appears. If an acoustic alarm has been selected, it sounds. If the value climbs back over the limit value, the instrument returns to the display previously shown.

➪ Continue with handling objective AUDIBLE ALARM ON/OFF.

6 Setting limit value (dtd) (only in combination with the humidity module)**:**

✓ The configuration mode is open

› Set the limit value with ▲/▼ and confirm with 💾.

ℹ When monitoring dewpoint distance, only one limit value can be selected If the set limit value is exceeded, the limit value is displayed in the top line. The current dewpoint distance is displayed as the main value. The min. value is displayed in the lower line. The alarm symbol flashes. If an acoustic alarm has been selected, it sounds. If the value climbs back over the limit value, the instrument returns to the display previously shown.

⇨ Continue with AUDIBLE ALARM ON/OFF.

7 Setting limit value (rH Surface) (only in combination with humidity module):

✓ The configuration mode is open.

› Select limit value with ▲/▼ and confirm with 💾.

ℹ For surface moisture, only one limit value can be selected. If the set limit value is exceeded, the limit value is displayed in the top line. The current surface moisture is displayed as the main value. The min. value is display ed in the lower line. The alarm symbol flashes. If an acoustic alarm has been selected, it sounds. If the value climbs back over the limit value, the instrument returns to the display previously shown.

⇨ Continue with handling objective AUDIBLE ALARM ON/OFF.

8 Audible alarm (BEEP On/OFF):

✓ The configuration mode is open.

› Select the desired option with ▲/▼ and confirm with 💾.

⇨ Continue with DELETE MEMORY YES/NO.

9 Delete memory yes/no (dEL On/OFF):

✓ The configuration mode is open.

› Select the desired option with ▲/▼ and confirm with 💾.

Return to measurement menu.

ℹ DELETE MEMORY deletes the entire contents of the memory.

6.3 Degree of emission

Materials have different degrees of emission, i.e. they produce different quantities of electromagnetic radiation. The degree of emission of the testo 845 is set at 0.95 ex-works. This is optimal for measurements of non-metals, plastics and food (paper, ceramics, plaster, wood, paints and lacquers).

Because of their low or inconsistent degrees of emission, bright metals and metal oxides have only limited suitability for IR measurements.

▶ Apply emission-enhancing coatings such as paint or emission adhesive tape (Order No. 0554 0051) to the object to be measured. If this is not possible, measure with a contact thermometer.

Degree of emission table for important materials (typical values)

Material (Temperature)	ε
Aluminium, bright rolled (170°C)	0,04
Cotton (20°C)	0,77
Concrete (25°C)	0,93
Ice, smooth (0°C)	0,97
Iron, sanded (20)°C	0,24
Iron with casting skin (100°C)	0,80
Iron with rolling skin (20°C)	0,77
Plaster (20°C)	0,90
Glass (90°C)	0,94
Rubber, hard (23°C)	0,94
Rubber, soft grey (23°C)	0,89
Wood (70°C)	0,94
Cork (20°C)	0,70

Material (Temperature)	ε
Cooling element, black anodized (50°C)	0,98
Copper, slightly oxidized (20°C)	0,04
Copper, oxidized (130°C)	0,76
Plastics: PE, PP, PVC (20°C)	0,94
Brass, oxidized (200°C)	0,61
Paper (20°C)	0,97
Porcelain (20°C)	0,92
Black paint, matt (80°C)	0,97
Steel, heat-treated surface (200°C)	0,52
Steel, oxidized (200°C)	0,79
Clay, fired (70°C)	0,91
Transformer lacquer (70°C)	0,94
Bricks, mortar, plaster (20°C)	0,93

6.4 Storing measurement protocols

To store a measurement protocol, the button  must be pressed. The instrument can be in measurement or HOLD mode. The main value continues to be displayed during storage. The current protocol number is displayed in the lower line. The storage symbol +M is additionally displayed. 90 measurement protocols can be displayed.

6.5 Printing measurement protocols

In this chapter, the printing of measurement protocols is explained

1 Printing measurement protocols:

✓ The instrument is in measurement display (Hold mode).

› Hold down Mode and press . Call up memory menu.
Select stored measurement protocol with / and confirm with .
Measurement protocol values are displayed.

View further stored measurement protocols with / .
Start printout with .
Return to memory menu with Mode .

ℹ The IR diode is situated on the front of the **testo 845**. Point the **testo 845** at the printer.

ℹ Return to measurement menu with Mode.
The configuration menu can be exited at any time. To do this, press Mode .
Instrument switches to measurement display. Changes already carried out in the configuration menu are stored.

6.6 Printing current readings

In this chapter, the printing of current readings is explained

1 Printing current values:

✓ The instrument is in measurement display (Hold mode).
Start printout with .

6.7 Reading memory full

When 90 measurement protocols have been stored, FULL is displayed. Delete reading memory as required.

7. Programming

This chapter describes the handling steps necessary to create measurement programmes.

7.1 Installing software

In order to adapt the programming of the testo 845 to your individual needs, you require a PC in which the software testo ComSoft (included in delivery) and the USB driver have been installed. You will find the instructions for the installation and operation of the software and the USB driver in the instruction manuals for testo ComSoft and the USB driver.

› After successfully installing the software, connect testo 845 to the PC.

7.2 Connecting testo 845 to a PC

› Connect the USB connection cable to your PC.
› Connect the USB connection cable to the testo 845.
› Start the software testo ComSoft.

7.3 Setting up connection

› Start software testo ComSoft.
› Select the function *Autodetect* in the menu bar *Instrument*.
The window *Autodetect* opens.
The connection to the testo 845 found is set up automatically and the name of the connection appears in *Archive*.

or

› Select the function *New device* in the menu bar*Instrument*.
The window *New device setup wizard* opens.
› Select *testo 845* in the instrument choice and click on *Next* .
› Enter the name of the connection and click on *Next* .

7.4 Opening connection

› Double-click on the connection to be opened in the window *Archive.*

If a measurement protocol has been stored in the testo 845, the protocol symbol and the short title of the protocol appear under the opened connection.

Using one connection for several testo 845

ℹ You can connect different testo 845 via one connection. When the testo 845 is changed, the connection must be broken and then re-made for the new testo 845, otherwise the software will not be able to identify it.

7.5 Programming testo 845

ℹ Programming deletes all values stored in testo 845.

› Read any existing data out of the testo 845 before programming (see instruction manual for the software testo ComSoft).

› Select the function *device control* in the menu bar *Instrument*.

ℹ This function is only active when the name of the connection is marked in colour. If this is not the case:

› First click on the name of the connection and then *Instrument> device control* .

- The window for programming the testo 845 opens.

7.5.1 Programming testo 845

Instrument

Date and time:

The set date and time of the testo 845 are displayed.

› To synchronize the date and time with the clock in your PC, select *synchronize* .

Options

› Set degree of emission. Mark displayed value and alter.

› Set unit °C/°F.

› Activate/deactivate laser, continuous measurement and illumination.
› Enter headers for printer.

Measurement configuration

Limit values (Factory setting)

	Infrared	Dew point distance	Surface moisture
upper limit value	950.0	-	-20.0
lower limit value	10.0	-40.0	-

› Activate/deactivate *Audible alarm*

Reset

› Activate/deactivate *Allow store deletion*

- Delete memory.
  Memory contents are deleted.
- Factory settings
  Instrument settings are returned to factory settings

Humidity module adjustment

› Press *Adjustment humidity module* button.
  The window *Dialog* opens.
› To adjust press the buttons 11.3% and 75.3%.
  Close window

7.5.2 Ending programming

› Click on *Apply* to apply the programming carried out to testo 845.

7.6 Disconnecting

› In the window *Archive*, click on the connection you want to disconnect with the right-hand mouse key.
› Select *Close*.
  The connection to testo 845 is disconnected.

8. Measuring

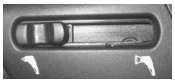
This chapter describes the handling steps required to carry out measurements with the product.

Measurement point, distance

Depending on the distance between the measuring instrument and the object to be measured, a certain measurement point is recorded.

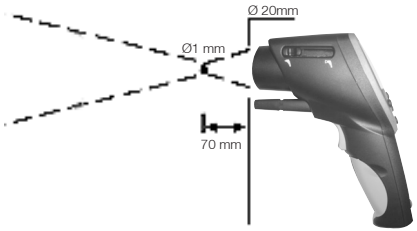
Measurement optics (Ratio distance : measuring point)

Close focus measurement



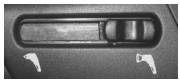
Set close focus measurement in the instrument.

The symbol is shown in the display



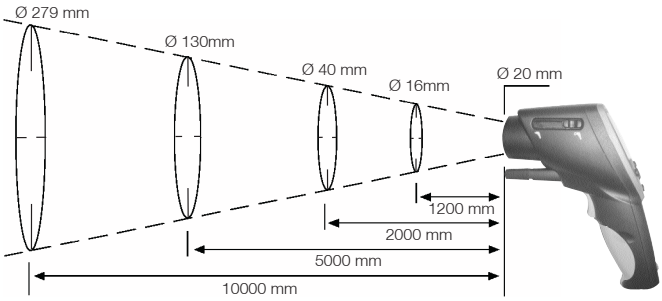
If a measurement distance > 250 mm, switch over to far field measurement.

Far field measurement



Set far field measurement in the instrument.

The symbol is shown in the display.



➢ Carrying out measurements:

ℹ Scrolling through the measurement menus is possible with the measurement trigger pressed down as well as in the Hold mode.

Hold mode

In the hold mode the last recorded measurement readings are frozen.

Continuous measurement switched off

The instrument measures as long as the measurement trigger is pressed. The instrument goes into Hold mode when the measurement trigger is released. The Hold mode is exited as soon as the measurement trigger is pressed again. The max. and min. values are reset.

Continuous measurement switched on

The measuring instrument measures without the use of the measurement trigger. The Hold mode is activated by pressing the measurement trigger. The instrument continues to measure as soon as the measurement trigger is pressed again. The max. and min. values are reset.

1 IR measurement ( )

✓ The instrument is switched on and is in measurement display. **Max** and **Min** are activated.

ℹ IR measurement is an optical measurement.
Keep the lens clean.
Do not measure if the lens is fogged.

2 IR measurement and TC probes (/)

ℹ Measurement menu only active when TC probe is plugged in.
Select the desired option with ▲/▼.
➢ Setting degree of emission.
✓ Instrument is in Hold mode.
Set degree of emission with Mode and ▲/▼.
ℹ During setting, Mode must be held down.
The IR temperature value is updated with every alteration of the emission value. The degree of emission of surfaces can thus be determined.

Observe minimum penetration depth for immersion / penetration probes: 10 x probe diameter

Avoid applications in aggressive acids or alkalis.

Do not make measurements on sharp edges with cross-band surface probes.

Display:
1. Max. value, 2. IR temperature, 3. Min. value

3 IR measurement and humidity module (/)

Measurement menu only active when humidity probe is plugged in.

Select the desired display mode with / .

Display:1. Humidity, 2. IR-Temperature, 3. Dewpoint

4 Temperature and humidity module ( )

Measurement menu only active when humidity probe is plugged in.

Select the desired display mode with / .
Display:1. Humidity, 2. IR-Temperature, 3. Dewpoint

5 Dewpoint distance ( )

Measurement menu only active when humidity probe is plugged in.
Display of dewpoint distance incl. max. and min. values.

Select the desired display mode with / .
Display:1. Max. value, 2. Dewpoint distance, 3. Min. value

6 Surface moisture

Walls and ceilings in danger of mould can be localized based on the surface moisture. The surface moisture is measured from 0 to 1.0 (0 = dry, 1 = very damp). According to DIN EN ISO 13788, the danger of mould on surfaces exists if the moisture level rises above 0.8 over several days. The testo 845 calculates the surface moisture from the surface temperature (IR) and the dewpoint of the air.

Measurement menu only active when humidity probe is plugged in.
Display of surface moisture incl. max. and min. values.

Select the desired display mode with / .

Display:1. Max value, 2. Calculated surface moisture, 3. Min. value

9. Care and maintenance

This chapter describes the handling steps which contribute to maintaining the functionality of the product and to extending its useful life.

➢ Cleaning the housing:

› If dirty, clean the housing with a damp cloth (soap solution). Do not use any aggressive cleaning products or solvents!

➢ Changing battery / rechargeable battery:



✓The instrument is switched off.

1 Open the battery compartment in the handle.

2 Remove empty batteries / rechargeable batteries
Pull the battery removal strip
or
push on the upper part of the battery with your finger. The battery is released.

3 Remove batteries and replace with new batteries. Observe polarity!



4 ReClose battery compartment.

10. Questions and answers

Question	Possible causes	Possible solution
is lit.	- Battery empty.	▶ Change battery.
Intrument cannot be switched on.	- Battery empty.	▶ Change battery.
Lasers light up briefly after switching on, then go out.	- Battery empty.	▶ Change battery.
Measurement value - - - - lights up.	- Measurement value outside measuring range.	-
Display FULL appears	- Measurement protocol memory full	▶ Delete memory
Err EE or Err HSEE appears		▶ Send instrument to Testo Customer Services

If we were not able to answer your question, please contact your dealer or Testo Customer Service. For contact data, see back of this document or web page www.testo.com/service-contact

11. Technical data

Description	testo 845
Measurement parameter	Temperature (°C / °F)
Measurement value recorder	Infrared sensor
Measuring range	• IR °C -35°C to +950°C • Humidity module 0 to 100%RH 0 to +50°C -20 to +50°C td • Contact °C -35 to +950 °C
Resolution	0.1°C (°C measurement parameters) 0.1%RH (humidity) 0.1°C td (dewpoint)
Accuracy IR (at 23°C) +/- 1 digit	+/- 2.5°C (-35 to -20.1°C) +/-1.5°C (-20 to +19.9°C) +/-0.75°C (+20.0 to +99.9°C) +/-0.75% of m.v.(+100 to +950°C)
Accuracy °C contact (Type K) +/- 1 digit	+/- 0.75°C (-35 to +75°C) +/-1 % of m.v. (+75.1 to +950°C)
Accuracy humidity module +/- 1 digit	+/- 2% RH (2 to 98% RH) +/-0.5 °C (+10 to +40°C) +/-1.0 °C (remaining range)
Emission factor	adjustable 0.1 to 1.0
Wavelength	8 to14 µm
Switchable distance ratio	Far field: 75:1 (16mm, distance 1200mm) Close focus: 1mm, distance 70mm
Probe	integrated infrared
Measurement rate	t95: 150 ms Scanning max./min./Alarm: 100 ms
Application temperature	-20°C to +50°C
Storage temperature	-40°C to +70°C
Battery type	2 x AA AlMn
Battery life	25 h (without laser) 10 h (with laser without backlight) 5 h (with laser and 50% backlight)
Battery exchange	by user
Housing	ABS (black, grey), metal cover
Display	three-line with backlight
Dimensions testo 845 in mm (LBH)	155 x 58 x 195
Dimensions case in mm (LBH)	405 x 340 x 93
Weight testo 845 without humidity module	455 g
Weight testo 845 with humidity module	465 g
Weight instrument and case	2700 g
EU guideline	2004/108/EEC
Sensitivity IR measurement:	± 2°C (± 3.6°F) for 640 MHz to 680 MHz in 2.5 V/m field. (+20.0...+99,9°C)
Interference:	trade-typical limit according to EN 61326-1